

NASA Conference Publication 3355



# **Sixth Alumni Conference of the International Space University**

**10<sup>th</sup> Anniversary Summer Session  
Program 1997**

Herring Hall, Rice University

Houston, Texas, USA

July 11, 1997



*Sponsored by*  
ISU U.S. Alumni Organization



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**National Aeronautics  
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## 1997 Organizing & Conference Committee

The 1997 ISU alumni conference would not have been possible without the work and talents of many people. The co-chairs of the conference wish to thank all who participated in the organization and accomplishment of the many 1997 ISU alumni conference and weekend events.

### 1997 ISU Alumni Conference Convenors

Steve Abrams.....	Space Informatics
Emma Ariane Taylor.....	Space Physical Sciences
Steve Berry.....	Space & Society
Dr. Lance Bush.....	Transfer of Technology, Spin-Offs, Spin-Ins
Michele Caruthers-See.....	Systems Architecture & Mission Design
Christophe Fondin.....	Space Business & Management
Amy Gerson.....	Space Engineering
Dr. Douglas Hamilton.....	Space Life Sciences
Dr. Elaine Hinman-Sweeney.....	Space Resource, Robotics & Manufacturing
Jana Rebmann.....	Satellite Applications
Patricia Seller-Wolff.....	Systems Architecture & Mission Design
George Tahu.....	Space Policy & Law
Dr. Martin Wuest.....	Strategies for the Exploration of Mars

### 1997 ISU Alumni Weekend Organizing Committee

Steve Berry.....	1997 Conference Co-Chairman
Josep Bernat.....	ISU Academics and Logistics
Thomas Braun.....	Space Art Exhibit, Hotel Coordinator
Dr. Lance Bush.....	1997 Conference Co-Chairman, Speaker Committee
Luke Dandeurand.....	ISU Audiovisual Coordinator
Kathy Daues.....	NASA Shuttle / MIR Exhibit
Gretchen Davidian.....	ISU Logistics, 10th Anniversary Reception
Ken Davidian.....	ISU Headquarters and Rice Facilities / Meals Coordinator
Kyle Fairchild.....	NASA Technology Transfer Exhibit
Priya Fernando.....	Design Project Roundtable, Strategies for Mars
Lawrence Friedl.....	Design Project Roundtable, Technology Transfer
Christie Haytas.....	ISU Schedule and Facilities Support
Elaine Hinman-Sweeney.....	Convenor Coordinator, Web Page Development
Brad Holcomb.....	Badging & Registration
Cliff Kapatais.....	ISU Student Poster Session
Max Larin.....	Design Project Roundtable, Technology Transfer
Dr. Kam Lulla.....	NASA Earth Observation Science Exhibit
Joanna Martinez.....	ISU Media Relations

1997 Alumni Weekend Organizing Committee (continued)

Renee Matossian.....	Alumni Welcome Reception
Paivi McIntosh.....	10th Anniversary Reception
Doug Messier.....	Speaker Committee
Cuong Q. Nguyen.....	Welcome Package
Emeline Paat-Dahlstrom.....	Space Masquerade
Frank Papa.....	Alumni Weekend Media Coordinator
Sarah Pearce.....	Space Masquerade
Muriel Riester.....	Web Page Maintenance
Noel Siemon.....	ISU Conference Budget
David Strack.....	Local Tour
Lia Tusanotte Cisnero.....	1998 Alumni Conference Co-Chair, Speaker Committee
Graham Weaver.....	Past ISU Alumni Conference Chair
Annalisa Weigel.....	Design Project Roundtable, Technology Transfer
Olga Zhdanovich.....	Design Project Roundtable, Strategies for Mars

## Preface

The sixth alumni conference of the International Space University, coordinated by the ISU U.S. Alumni Organization (IUSAO), was held at Rice University in Houston, Texas, on Friday July 11, 1997.

The alumni conference gives graduates of the International Space University's interdisciplinary, international, and intercultural program a forum in which they may present and exchange technical ideas, and keep abreast of the wide variety of work in which the ever-growing body of alumni is engaged. The diversity that is characteristic of ISU is reflected in the subject matter of the papers published in this proceedings.

This proceedings preserves the order of the alumni presentations given at the 1997 ISU Alumni Conference. As in previous years, a special effort was made to solicit papers with a strong connection to the two ISU 197 Summer Session Program design projects: (1) Transfer of Technology, Spin-Offs, Spin-Ins; and (2) Strategies for the Exploration of Mars. Papers in the remaining ten sessions cover the departmental areas traditional to the ISU summer session program.

Of special note in 1997 is that it is the first year of the Design Project Roundtables, working discussions between alumni and students, which are intended to strengthen the alumni involvement in the Summer Session projects, and to introduce 1997 students into the distinguished ISU alumni family.

The IUSAO wishes to thank the NASA Johnson Space Center for sponsoring the 1997 ISU Alumni Conference proceedings publication, especially Luanne Jorewicz, for her hard work. NASA provided a tremendous service to the ISU through their willing assistance and significant technical expertise in the publication of these proceedings.

Steven R. Berry  
ISU Class of 1992, USA  
Space Policy & Law

Dr. Lance B. Bush  
ISU Class of 1992, USA  
Space Engineering



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**Session 1**  
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